QUESTIONS ABOUT PURPOSE

* Which species are sensitive to environmental changes or management changes of concern in the park? Monitoring and analyses should focus on those. If all the more common species are not actually very sensitive or important to management, then only doing trend on common species is insufficient.

CHECK

* Detection distance by year? week?
* Which species are “clumpy”? I can perhaps figure that out by species in which % of records with >1 bird exceeds the single detection records (assuming a min# of records)
* Commonly detected should probably only be for post-2019
* For detection distance, use detections/ 1000sqm instead of distance bins
* Counts are zero-inflated, it seems

STANDARD ANALYSIS VIOLATIONS

* For grassland (open habitat) birds such as eastern meadowlark and northern mockingbird, distribution of detection distances seems to be different—with more detections farther from observer and the majority of detections > 100m away (or is this more a difference btwn loud and quiet birds?)
* Detection distance patterns very different among parks for some species, e.g., carolina wren

QUESTIONS FOR EDA DISPLAYS:

* Is there some kind of bird “grouping” that would be useful?
  + breeding landbirds would be one group
* Grouping point locations by habitat type, or do we have other potential detection covariate data related to understory or overstory canopy for each point?
* Species richness lists exclude flyovers and birds detected only outside of the point count periods—is that okay?

CONSIDER IN DATA:

* Visual detections would likely follow a different distance-detection distribution
* Treatment of flocking species
* Calculate time since local sunrise and use as covariate

SPATIAL PATTERNS TO DISPLAY:

* For each species: Trends mapped out in space, with trends indicated by up or down arrows and color-coded by statistical significance (red = signif; gray = NS)

ANALYSIS QUESTIONS:

* A bit odd the metric for commonly detected species. It is based only on first three survey yrs. Seems it should depend more on interest in the species, and on whether or not the statistical model can converge and yield reasonably sufficient estimates. The number of surveys/yr has changed over time, and statistical methods will increasingly be able to deal with small sample sizes. Plus, it depends on how much noise there are in the data.

CAVEATS:

* Because typically same observer per park, cannot parse out any observer error
* Depending on the park unit, the hab\_class may be more or less appropriate (i.e., homogeneous within the circle—not the case for SAAN)
* I think probably best to do model analyses limited to 100m. and not including the last (unknown) distance band but we can see how models differ from patterns in raw counts with and without that infinite distance band